Methane Hydrate Advisory Committee (MHAC) Meeting

June 6, 2013

2:00 pm – 5:00 pm (EST)

Washington, DC

ATTENDANCE

The meeting was conducted with members participation both in–person and through a WebEx link that had been established. See the attached list for those in attendance for this session.

MEETING SUMMARY

DFO Welcome and Introductions (Guido DeHoratiis)

Following introductions of all attendees and a head count to verify that a quorum of members were present, Guido DeHoratiis, Acting Deputy Assistant Secretary (DAS) for Oil and Natural Gas within the U.S. Department of Energy (DOE) and Acting Designated Federal Officer (DFO) for the Methane Hydrate Advisory Committee (MHAC), called the meeting to order at 2:01 pm and identified three key priorities for the meeting: to analyze currently available methane hydrate information and data, to address environmental and climate issues, and to identify and realize methane hydrate production opportunities. He also informed the Committee that although FY 2014 funding request was not increased versus FY 2013, the request language will allow for DOE to fund field activities, a significant achievement for the Program. The FY 2015 budget process was explained briefly with the main point being that high level briefings for the Secretary will likely take place towards the end of July, so any guidance that the Committee wishes to provide to the Secretary should be submitted by the end of July. Mr. DeHoratiis then introduced Dr. Mary Feeley as the Committee Chairman.

Chairman's Welcome and Expectations (Missy Feeley)

Dr. Mary (Missy) Feeley, MHAC Chairman, stressed that a central objective of the meeting was to explore how the MHAC can be more effective in its stated goal of advising the Secretary of Energy on issues concerning methane hydrates, especially with the recent appointment of Secretary Ernest Moniz. Dr. Feeley noted that the Committee was concerned that the letter it sent to Secretary Chu in August 2014 to inform the FY 2014 budget process was neither answered nor acknowledged. Dr. Feeley and Mr. DeHoratiis agreed that the MHAC's present goal was to advise the Secretary on research opportunities for the FY 2015 budget process and there was some discussion as to how to best do that timely. Mr. DeHoratiis indicated that the best time for MHAC guidance to be considered would be to deliver it by the end of July; but as soon as possible would be preferable.

Committee Business (Louis Capitanio)

Lou Capitanio, Program Manager of the Methane Hydrate Program at the Office of Oil and Natural Gas within DOE, outlined committee business. The agenda for the meeting is attached. He informed the committee that no public comments were received in advance of the meeting. He also indicated that the MHAC Charter expires on October 21, 2013 and membership appointments expire October 12, 2013. Mr.

Capitanio identified his action item to contact all members within the next week to determine their interest in continuing on the Committee through a reappointment by the Secretary. Dr. Feeley asked about the length of appointments and term limit. Appointments are 2 years in duration and there is no term limit. Dr. Feeley inquired whether the Committee could make recommendations for new members based on expertise and skills mix of the Committee. She was advised that the Secretary will consider membership recommendations from the Committee. Finally, the Special Government Employee (SGE) members of the Committee must receive an annual ethics briefing by DOE's General Council by phone. Mr. Capitanio recommended that the briefings occur after membership changes are finalized, in October or November.

Following the attached meeting agenda, Dr. Feeley introduced the first presentation.

Presentation: ConocoPhillips test results and data analysis (Brian J. Anderson)

Brian J. Anderson, Associate Professor of Chemical Engineering at West Virginia University (WVU), updated the committee with the analysis of the test results from the ConocoPhillips field experiment at Prudhoe Bay.

A field test was conducted, with ConocoPhillips as operator, to evaluate methane production through both CO_2/CH_4 exchange and via depressurization. It was the first field-scale, non-laboratory test on the CO_2/CH_4 hydrate exchange technology. There were four goals discussed: (1) to evaluate CO_2/CH_4 exchange; (2) to demonstrate concepts at a larger-than-lab scale; (3) to validate exchange mechanisms from laboratory work, including confirming injectivity into naturally occurring methane hydrate, confirming methane release without production of water or sand, and obtaining reaction rate data; and (4) to demonstrate stable production of natural gas hydrates by depressurization.

The award funding was received in 2008. From 2008-2010, the team worked to identify an accessible test site. In 2011, the "Iġnik Sikumi #1" well was drilled, logged, and completed and the field test was designed. In 2012, the team re-entered and perforated the well, and performed the exchange test, followed by the depressurization production test. Then, the well was plugged and the site remediated. ConocoPhillips prepared the data set and are currently in the data analysis phase.

Mr. Anderson provided a brief description of the 2012 testing. The Iġnik Sikumi #1 well was perforated on February 15, and the injectivity test began with the injection of a mixture of CO_2 and N_2. Injectivity was decreasing early after the start of the test, but gradually increased with time, which suggested the hydrate disassociation was occurring. Overall, there was a successful injection of CO_2 mixture into the reservoir. Production began on March 4, and methane gas production rates increased as depressurization occurred, as expected. Methane was produced above and below the methane stability pressure, with the preferential retention of CO_2 over N_2, indicating successful CO_2 exchange. However, there is no clear indication of how far into the reservoir was perturbed. In total, over 850 mscf of methane was produced.

Data was compiled in a database available on the NETL Website at http://prod-mmedia.netl.doe.gov/requestData.php. The online database folder includes diagrams of operations, a master variable list, an operation event log, and a supporting data document. Raw data is available in CSV and MySQL formats, and final data (which has been cleaned and averaged in 1 and 5 minute intervals) is

available in MS SQL database, CVS, and Matlab format. Academia, industry, et al can access the database and conduct analyses of it.

Currently, WVU is using several modeling and simulation tools, including an adiabatic CTC model and Mix3 HRS software, to analyze the data. WVU is in the history matching phase, attempting to explain the discrepancies between modeled values and those obtained in the field, including variances in amount of methane produced, amount of water produced, temperature increase, and preferential recovery of N_2 vs. CO_2.

The preliminary conclusions of the field project include the following:

- The project demonstrated the injection of CO_2 mixture into a water-filled hydrate reservoir.
- The project confirmed the exchange of the injection mixture with methane hydrate.
- The project proved that Low BHP is achievable during depressurization.
- Heterogeneous injection and production were observed.
- The project produced a temperature record consistent with hydrate association and dissociation during injection and production cycles.

In the future, the project team will organize a problem for the "Code Comparison Project" dealing with the results of the Iġnik Sikumi well and will possibly create "Special Volumes" in peer-reviewed journals for reporting results.

Mr. Anderson acknowledged his collaborators from Japan and thanked them for their help.

The Committee took a break at 3:50 pm and reconvened in full at 4:00 pm.

Presentation: Update on BOEM Lower 48 Assessment (Matthew Frye)

Matthew Frye of the Resource Evaluation Division of the Bureau of Ocean Energy Management (BOEM) presented the BOEM Assessment of In-Place Gas Hydrate Resources of the Lower 48 United States Outer Continental Shelf.

BOEM began their assessment efforts in 2003 with the Gulf of Mexico, selected due to its wealth of data. This project was completed and results were released in 2008. In 2009 and 2011, they began work on the Atlantic Ocean model/input files, and the Pacific Ocean model/ input files, respectively. A fact sheet on the Lower 48 was then released in 2012, which is scheduled to be followed by the full assessment of the Atlantic in 2013, pending concurrence needed for release. The Pacific full documentation is also expected to follow later within 2013, and the Alaska Outer Continental Shelf Assessment is scheduled to begin in 2014.

The model used for the assessment is a spatial, mass-balance computational model for biogenic gas, reflecting local geology and data availability, and without introduction of geologic risk. The primary outputs of the model are distribution maps of methane hydrate resources as "gas-in-place volumes" in the Atlantic and the Pacific Oceans.

The study area in the Atlantic measured approximately 514,000 km^2, which the model partitioned into cells of 3km x 3km. Data was taken from 51 permitted wells, 50 Ocean Drilling Program (ODP) and Deep Sea

Drilling Project (DSDP) wells, and 200,000 miles of 2D multi-channel seismic lines. Inputs to the model included water depth, sand % (with two end members of sand and shale), sediment thickness, bottom simulating reflector (BSR), and a mean geothermal gradient. Using these inputs and a Stability Equation (modified from Milkov and Sassen, 2001), the model produced hydrate stability zone, gas generation, gas charge, gas saturation, and in-place gas hydrates volume as spatial outputs.

The study area in the Pacific was more tectonically complex and had fewer available data sources, including on 20 wells (17 ODP/DSDP, 1 OCS well, and two ODP wells). The assessment followed the same general approach as that for the Atlantic, with several of the same inputs and outputs. Crustal age and total organic carbon were added as spatial inputs, and the spatial input of "Sand %" was replaced with a "Depofacies" input. As with the Atlantic Assessment, the model produced hydrate stability zone, gas generation, gas charge, gas saturation, and in-place gas hydrates volume as spatial outputs.

In the future, BOEM plans to assess hydrate volumes in Alaskan Deepwater.

Results of Consortium for Ocean Leadership Workshop (Greg Myers and Tim Collett)

Greg Myers, Consortium for Ocean Leadership (COL) and Tim Collett, Research Geologist, U.S. Geological Survey (USGS) led a briefing on the preliminary results of the COL Methane Hydrate Workshop.

Greg Myers, Principal Investigator and Project Manager, COL, began the presentation with an explanation of the FY 2013 Methane Hydrate Field Program funding, goals, approach, and deliverables. The Project was funded by DOE/NETL through the FY 2012 Funding Opportunity Announcement and an associated Methane Hydrate Workshop was conducted from June 4-6, 2013. The main objective of the overall project is to "enable scientific ocean drilling, coring, logging, testing, and analytical activities to assess the geologic occurrence, regional context, and characteristics of methane hydrate deposits along the continental margins of the U.S. with an emphasis on the Gulf of Mexico and Atlantic margin." To begin this project, the team created a Project Management Plan, which is available on the Consortium's website http://www.oceanleadership.org/scientific-programs/methane-hydrate-field-program/ and established the Science Team, led by Tim Collett, Project Advisor and hydrate community liaison. A Historical Methane Hydrate Project Review and a Synthesis Report were prepared and are also available on the website.

Tim Collett, Project Advisor, continued the presentation, discussing the workshop set-up and deliverables. This workshop represented the next large milestone for this project, and served to engage the methane hydrate community regarding the creation of a Methane Hydrate Science Plan. For the workshop, they identified six key "Science Challenges", unknowns about methane hydrates, which included: (1) MH Resource Assessment, (2) MH Production Analysis, (3) MH Related Geohazards, (4) MH Role in Global Carbon Cycle, (5) MH Petroleum Systems, and (6) MH Laboratory and Field Characterizations.

The Science Team decided to focus on challenges (1)-(4), reclassifying challenges (5)-(6) into the "crosscutting issues" of MH system, MH Laboratory and Field Characterization, and also including a new issue of Up-scaling: molecular-micro-mega-regional-global. The challenges were used to schedule three "breakout" discussions at the workshop, including (1) Methane Hydrate systems with considerations of

MH resource assessment and global carbon cycle analysis, (2) Methane hydrate production analysis, and (3) Methane Hydrate related geohazard characterization and assessment. Based on the recommendations from these breakouts, the team will propose specific scientific drilling expeditions by site and locations.

The workshop resulted in an initial deliverable, the Workshop Report, which will be incorporated into the historical review, and is expected to be finished early July 2013. The second, primary deliverable from the workshop is the development of the Methane Hydrate Project Science Plan, which will aim to define knowledge gaps, articulate hypotheses, determine regions for exploration, set goals for hydrate drilling expeditions, develop measurement and sampling requirements, and address various technical concerns. The science team will meet to write the science plan in late July 2013, with a final plan expected to be completed by the end of September. Subsequently, this plan may be used in a Phase 2 effort to develop an operational plan for a future field program.

Adjourn

The meeting was adjourned at 5:20 PM.

Methane Hydrate Advisory Committee (MHAC) Meeting

June 7, 2013

8:00 am – 12:30 pm (EST)

Washington, DC

ATTENDANCE

The meeting was conducted with members participation both in–person and through a WebEx link that had been established. See the attached list for those in attendance for this session.

MEETING SUMMARY

Introduction (Guido DeHoratiis)

Mr. DeHoratiis welcomed the members on the phone and convened the meeting at 8:05 am.
Committee Chair Dr. Feeley promptly introduced the day's first speaker, Takami Kawamoto.

Update on JOGMEC deepwater methane hydrate extraction test (Takami Kawamoto)

Takami Kawamoto, Deputy Director General, Methane Hydrate R&D Division, JOGMEC (Japan Oil, Gas, and Metals National Corporation), updated the Committee on the deepwater methane hydrate extraction test.

The Japan's Methane Hydrate R&D Program (the Program) has 3 phases: (1) Basic Research, (2) Technological Research and Production Tests, and (3) Establishment of a Technological Platform. The Ministry of Economy, Trade and Industry (METI) has delegated implementation of the Program to JOGMEC. JOGMEC is currently in Phase 2 of the Program. Phase 1 involved two Onshore Production

Tests, in 2002 and 2008, and a Resource Assessment in the Eastern Nankai Trough, involving seismic surveys and exploratory drillings. Phase 2, spanning FY2009 - FY2015, involves two offshore production tests, which occur in FY 2012 (which runs from April 2012 through March 2013) and FY2014. It also includes technological studies on production methods, flow testing, environmental impacts and resource assessments. Phase 3 will span FY2016–FY2018 and will involve studies to establish a technological platform for the commercialization of methane hydrate and an evaluation of the Program.

As a part of Phase 2, the First Offshore Methane Hydrate Production Test occurred from FY2011 - FY2013. JOGMEC coordinated with the operator, Japan Petroleum Exploration Company (JAPEX), and used drilling vessel "Chikyu", owned by Japan Agency for Marine-Earth Science and Technology (JAMSTEC). The Eastern Nankai Trough located off the south coast of central Japan in the Pacific Ocean was selected as a test site due to the confirmed methane hydrate resource present. The test took place in waters 1 kilometer deep, where the 60-meter-thick methane hydrate reservoir was 270 meters beneath the sea floor. After drilling a production well and two monitoring wells, the team applied the depressurization method to successfully produce offshore methane hydrate. The flow test lasted from March 12 through March 18, and was discontinued due to poor weather and sand production. The gas production totaled approximately 120,000 cubic meters, averaging about 20,000 cubic meters a day.

The early conclusions of the first production test include the following:

- Offshore methane hydrate production technology was verified – methane flow was sustained for six days.
- Offshore methane hydrate production behavior was confirmed – acquired data which will be evaluated in FY2013.
- Monitoring technologies were applied and verified.

Data analysis is ongoing, but preliminary data from the production test could be released later this fiscal year. The immediate next steps of the Program will be to plan for another offshore production test, but the location and other specific details are not yet determined. Regardless of the site, the next production test is likely to be of significantly longer duration; approximately 1 year.

Remarks from Christopher Smith, Acting Assistant Secretary for Fossil Energy

Chris Smith, Acting Assistant Secretary for Fossil Energy was introduced and invited to say a few words. He explained that Secretary Moniz is very interested in methane hydrates, and despite a tough budget environment there will be opportunities for doing research on transformational technologies such as methane hydrates. The climate-change focus of the Administration makes methane hydrates a promising research topic. The Committee offered to meet with the Secretary or other senior officials, as necessary. Further, Mr. Smith lauded the data and preliminary results from the ConocoPhillips and JOGMEC tests as extremely exciting for the methane hydrates community. Mr. Smith expressed his appreciation for the spirit of collaboration in this advisory committee, and thanked the Committee for their work in steering programs and providing recommendations for research program budget requests.

FY 2013 Program Activities; FY 2014/2015 Research Plans; Draft Interagency Roadmap (Ray Boswell)

Ray Boswell, Methane Hydrates Technology Manager, National Energy Technology Laboratory (NETL) revisited FY 2013 program activities then looked forward to FY 2014/2015 research opportunities in conjunction with the Draft Interagency Roadmap.

Through 2010, the DOE-NETL Methane Hydrates Program had many key successes, including, but not limited to, conducting three Arctic/Deepwater field programs, resolving gas hydrate drilling hazards in the Gulf of Mexico, and earning positive external reviews. In FY 2011 and FY 2012, new collaborative interagency projects were developed, new projects with industry and academia were awarded, and the Iġnik Sikumi well was drilled, logged, instrumented, and tested. As a result of these efforts, the federal role in gas hydrate science and technology development is widely accepted and the groundwork is well laid for future work. The goals for future research include studying environmental impacts of production, confirming resource size and location, analyzing marine gas hydrate occurrences, refining and calibrating exploration technologies, and integrating gas hydrate science into global carbon cycle models. A great deal of future research will likely need to be field-based.

In FY 2013, the Methane Hydrate Research program is focused on U.S. marine gas hydrate exploration, facilitating potential Arctic testing programs, data analysis from the DOE/ConocoPhillips/JOGMEC exchange field trial, interagency and international collaborations, and clarifying gas hydrates' role in the global carbon cycle. Regarding marine methane hydrate exploration, the program intends to work with academia and research groups to advance marine field programs, take advantage of opportunities through the previously-discovered Gulf of Mexico sites, and utilize the BOEM Lower 48 Offshore Gas Hydrate Assessment. Ocean bottom seismic data from the JIP sites will be analyzed. The FY 2013 Funding Opportunity Announcement was issued on May 6 and is consistent with these focus areas. Proposals are due in July.

In the Arctic, NETL will work with external groups and utilize the recent DOE-Alaska Department of Resources Memorandum of Understanding to facilitate the consideration of new field programs. Data evaluation and analysis is ongoing for the DOE/ConocoPhillips/JOGMEC CO_2-CH_4 exchange field trial. The DOE Methane Hydrate Research program will continue to work with Japan on core analyses, and continue ongoing collaboration with Korea and India. Finally, several new projects were outlined, which included new approaches in marine geophysical evaluation, laboratory and modeling investigation of the physical nature of gas hydrate-bearing strata, and field studies of the links between methane hydrates and the global carbon cycle.

Dr. Boswell then shifted the topic of his presentation to the draft Interagency Long-Range Roadmap for Methane Hydrate Research and Development ("Roadmap") prepared by the Interagency Technical Coordination Team (TCT). The initial Roadmap was first published in 2006, with a 5-year plan released in 2007. It was updated in 2009-2010 but not published. This FY 2013 revision was submitted to the Advisory Committee in late May and is currently in draft form. The document aligns priority goals with recent program budget levels. It includes an executive summary, background detailing recent advances in knowledge, the structure and priorities of the U.S. National Methane Hydrates R&D Program, long-

range R&D roadmaps, key processes, alternative program funding scenarios, and conclusions. The MHAC was asked to provide comments on the draft Roadmap.

Program Budget (Lou Capitanio)

Lou Capitanio, the Committee Manager, overviewed DOE's Methane Hydrate program budget. In FY 2012, there was an appropriation of $9.7 million. A Funding Opportunity Announcement (FOA) was released to the research community in order to fund the development of alternative field and supporting laboratory and modeling research opportunities. The appropriation was also used to continue ongoing industry, National Lab, inter-agency and in-house research projects.

The FY 2013 appropriation was $4.8 million, after a budget request of $5 million was impacted by the sequestration. Under the current full-year Continuing Resolution, methane hydrates research will focus on cost-effective and responsible extraction of methane hydrates. It is not immediately possible to fund a long-term production test in the Arctic to follow up on the success of the ConocoPhillips test, but there is still planned work under the FOA in three topic areas: 1) characterization of gas hydrate deposits, (2) response of gas hydrate reservoirs to induced change, and (3) response to methane hydrate systems to environmental change. With this FY 2013 budget appropriation, the National Labs and inter-agency agreements will continue to be utilized for fundamental studies and numerical modeling.

The budget request for FY 2014 is $5 million, stating that the Natural Gas program intends to conduct lab- and/or field-based research focused on increasing public understanding of methane dynamics in gas-hydrate bearing areas." Furthermore, this proposed funding will be used to evaluate gas hydrate resource fundamentals, as well as the potential hazards and environmental implications. This budget language allows for DOE-funded field work; continued work on FY 2013 projects; continued utilization of national labs and inter-agencies; and continued work with industry, Alaska Department of Natural Resource (ADNR), and international collaborators for opportunities to design an arctic testing program.

The key planned dates in the FY 2015 budget cycle were outlined. FY 2015 budget process began in May 2013 with the preparation of an internal budget for the Secretary by DOE's Office of Fossil Energy. By August 2013, the Secretary will review all Office's budgets and make final decisions. On September 9, 2013, DOE will submit a budget request to the Office of Management and Budget (OMB). Passback occurs in late November or early December 2013 whereby OMB provides the Administrations recommendations to DOE. In early February 2013, the Administration budget request will be sent to Congress. In February and March of 2014, Congress will hold budget hearings; they will conduct their budget mark-up in June and July of 2014. By late 2014, a Congressional Appropriation Bill is expected to be passed to appropriate the FY 2015 funding.

Strategic Direction (Guido DeHoratiis)

Mr. DeHoratiis stated that he would like to reserve time so that the Committee can have adequate time for discussion; therefore the discussion was turned over to Dr. Feeley. In response to a question about the budget process and cost-share requirements, Mr. DeHoratiis explained that all of the methane hydrate research work requires a 20 percent minimum cost-share participation.

Committee Discussion (Mary Feeley)

Dr. Mary (Missy) Feeley led the Committee discussion. She established key items for them to discuss including the following:

- Suggesting new Committee members;
- Requesting a meeting with Secretary Moniz;
- Reviewing and providing comments on the draft "Interagency Roadmap for Methane Hydrate and Research Development" prepared by the Technical Coordination Team of the National Methane Hydrate R&D Program); and
- Scheduling the next MHAC meeting.

Dr. Feeley suggested that the Committee members provide her with any recommendations of new members, which she will compile and relay those suggestions to Mr. Capitanio and Mr. DeHoratiis.

The Committee agreed they would like to schedule for a small subset of members to meet with the Secretary of Energy to provide their individual comments on the DOE Methane Hydrates Research Program and to determine the Secretary's priorities for the program. Guido DeHoratiis advised that a letter from the Committee to the Secretary is the best way to request that meeting. Committee Chair Dr. Feely and the Co-Chair, Peter Flemings, committed to preparing this letter as soon as possible, and sending a draft out to the Committee. The selected members will request the meeting be scheduled for the next couple of months.

The Committee has been asked to provide a review of the draft "Interagency Roadmap for Methane Hydrate Research and Development: 2015-2030." They intend to conduct most of the review process through e-mail. Dr. Feeley agreed to email the current draft roadmap to Committee members on June 10 so that all can review the same document. Dr. Feeley will consolidate the members' comments via email and prepare a response to the TCT. The Committee asked Ray Boswell, NETL, to add more detailed funding information to the current draft. The Committee is interested to know how much it would cost to conduct a long-term arctic production test and what could be accomplished with larger budgets. Dr. Boswell agreed, and will be sending an updated draft, including additional information on projected costs and additional breakdown of goals, to the Committee by June 14. After a recommendation from Guido DeHoratiis, the members will focus their review on the Executive Summary and Long-Range R&D Roadmap Goals sections of the document.

The Committee will also begin preparing a letter of specific recommendations for the Methane Hydrate Program. The contents of the letter will be fleshed out via email and the Committee will vote on the contents of that letter at their next meeting. It was decided that the Committee will convene via a teleconference on July 16, 2013, from 1-4 PM EDT to finalize the Roadmap and letter recommendations and vote on their comments.

The Committee will be taking steps to schedule annual in-person meetings going forward. The May timeframe will be targeted for the annual meeting. Other official committee business can be conducted via teleconferences and/or WebEx meetings.

Public Comments (Guido DeHoratiis)

The Acting DFO noted that the meeting was open for public comment, but no requests to speak had been made. The meeting was adjourned at 11:54 AM.

Mary Feeley, Chair

Guido DeHoratiis, Acting DFO

Table 1: List of Attendees - June 6, 2013

MHAC Meeting June 6, 2013 List of Attendees		
Attendee	**Role**	**WebEx?**
Dr. Thomas Blasingame Texas A&M University Department of Petroleum Engineering	Committee Member	Y
Mr. Richard Charter Co-Chair, National OCS Coalition Resources Legacy Fund Foundation	Committee Member	N
Dr. Mary Feeley ExxonMobil Exploration Company	Committee Member	N
Dr. Peter Flemings Bureau of Economic Geology The University of Texas at Austin	Committee Member	N
Dr. David Goldberg Lamont Doherty Earth Observatory Marine Geology and Geophysics Department	Committee Member	Y
Dr. Miriam Kastner Professor Scripps Institute of Oceanography University of California, San Diego	Committee Member	N
Dr. Carolyn Koh Colorado School of Mines Chemical Engineering Department	Committee Member	N
Dr. Craig Shipp Geohazards Assessment and Pore Pressure Prediction Team Shell International Exploration and Production Inc.	Committee Member	N
Mr. Robert Swenson Acting Director and State Geologist Alaska Department of Natural Resources Div. of Geological & Geophysical Surveys	Committee Member	Y
Dr. Anne Trehu Oregon State University	Committee Member	N
Dr. Joseph Wilder Department of Theoretical and Applied Mathematics University of Akron	Committee Member	Y

William Shedd BOEM	Methane Hydrate Technical Coordination Team	N
Lou Capitanio Committee Manager U.S. Department of Energy	DOE Staff	N
Guido DeHoratiis Acting Deputy Assistant Secretary for Oil and Gas U.S. Department of Energy	Acting DFO	N
Erica Folio General Engineer U.S. Department of Energy	DOE Staff	N
Christopher A. Smith Acting Assistant Secretary for Fossil Energy U.S. Department of Energy	DOE Staff	N
Joseph Trunzo IBM	DOE Support	N
Alexis Vrotsis Mickey Leland Energy Fellowship, Tulane University	DOE Support	N
Brian Anderson West Virginia University	Speaker	N
Matthew Frye BOEM	Speaker	N
Rick Baker NETL	Other	N
Ray Boswell NETL	Speaker	N
Tim Collett USGS	Speaker	N
Takami Kawamoto Japan Oil, Gas, and Metals National Corporation	Speaker	N
Greg Myers Consortium for Ocean Leadership	Speaker	N
Bruce Herman BOEM	Other	N
Nicholas Woodward DOE Office of Science	Other	N

Table 2: List of Attendees - June 7, 2013

MHAC Meeting June 7, 2013 List of Attendees		
Attendee	**Role**	**WebEx?**
Dr. Thomas Blasingame Texas A&M University Department of Petroleum Engineering	Committee Member	Y
Mr. Richard Charter Co-Chair, National OCS Coalition Resources Legacy Fund Foundation	Committee Member	N
Dr. Mary Feeley ExxonMobil Exploration Company	Committee Member	N
Dr. Peter Flemings Bureau of Economic Geology The University of Texas at Austin	Committee Member	N
Dr. David Goldberg Lamont Doherty Earth Observatory Marine Geology and Geophysics Department	Committee Member	Y
Dr. Miriam Kastner Professor Scripps Institute of Oceanography University of California, San Diego	Committee Member	N
Dr. Carolyn Koh Colorado School of Mines Chemical Engineering Department	Committee Member	N
Dr. Craig Shipp Geohazards Assessment and Pore Pressure Prediction Team Shell International Exploration and Production Inc.	Committee Member	N
Mr. Robert Swenson Acting Director and State Geologist Alaska Department of Natural Resources Div. of Geological & Geophysical Surveys	Committee Member	Y
Dr. Jefferson W. Tester Cornell University	Committee Member	Y
Dr. Anne Trehu Oregon State University	Committee Member	N

Dr. Joseph Wilder Department of Theoretical and Applied Mathematics University of Akron	Committee Member	Y
Lou Capitanio Committee Manager U.S. Department of Energy	DOE Staff	N
Guido DeHoratiis Acting Deputy Assistant Secretary for Oil and Gas U.S. Department of Energy	Acting DFO	N
Erica Folio General Engineer U.S. Department of Energy	DOE Staff	N
Christopher A. Smith Acting Assistant Secretary for Fossil Energy U.S. Department of Energy	DOE Staff	N
Joseph Trunzo IBM	DOE Support	N
Brian Anderson West Virginia University	Speaker	N
Ray Boswell NETL	Speaker	N
Tim Collett USGS	Speaker	N
Takami Kawamoto Japan Oil, Gas, and Metals National Corporation	Speaker	N
Yosuke Sato Japan Oil, Gas, and Metals National Corporation	Other	N
Nicholas Woodward DOE Office of Science	Other	N

Methane Hydrate Advisory Committee Meeting

June 6, 2013 2:00pm – 5:00pm (EDT)
June 7, 2013 8:00am – 12:30pm (EDT)

Public Access
U.S. Department of Energy
Forrestal Building, Room 5E-069
1000 Independence Ave., SW
Washington, DC 20585

Member WebEx Access
Call-in: 1-650-479-3208 **(Access code: 990 709 561)**
To join the online meeting:
1. Go to
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2. If requested, enter your name and email address.
3. If a password is required, enter the meeting password: password
4. Click "Join".

AGENDA
June 6, 2013 2:00pm – 5:00pm (EDT)

Time	Discussion Item	Speaker
1:30 pm – 2:00 pm	Registration	All
2:00 pm – 2:15 pm	DFO Welcome and Introductions	Guido DeHoratiis, Acting DAS for Oil and Natural Gas, and Acting Designated Federal Officer (DFO)
2:15 pm – 2:30 pm	Chairman's Welcome and Expectations	Mary (Missy) Feeley, Chairman of the Methane Hydrate Advisory Committee
2:30 pm – 2:40 pm	Committee Business	Lou Capitanio, Program Manager Methane Hydrate Program
2:40 pm – 3:20 pm	ConocoPhillips test results and data	Brian Anderson, NETL-RUA (West Virginia University)
3:20 pm – 3:35 pm	Break	All
3:35 pm – 4:15 pm	Update on BOEM Lower 48 Assessment	Matt Frye, BOEM
4:15 pm – 5:00 pm	Results of Consortium for Ocean Leadership Workshop	Greg Myers, Consortium for Ocean Leadership Tim Collett, Research Geologist, U.S. Geological Survey

5:00pm	Adjourn

AGENDA
June 7, 2013 8:00am – 12:30pm (EDT)

Time	Discussion Item	Speaker
7:40 am – 8:00 am	Registration	All
8:00 am – 8:40 am	Update on JOGMEC deepwater methane hydrate extraction test	Takami Kawamoto, Deputy Director General, Methane Hydrate R&D Division, JOGMEC
8:40 am – 10:00 am	FY 2013 Program Activities FY 2014/2015 research plans Draft Interagency Roadmap	Ray Boswell, Technology Manager, Methane Hydrates Rick Baker, Project Manager for Methane Hydrates, National Energy Technology Laboratory (NETL)
10:00 am – 10:15 am	Break	All
10:00 am – 10:15 am	Program Budget ▪ FY 2013 budget appropriation ▪ FY 2014 request and plans	Lou Capitanio, Program Manager Methane Hydrate Program
10:15 am – 10:45 am	Strategic Direction Discussion session of DOE's goals and how the near term (2013 – 2014) program fits into the longer term goals and strategy.	Guido DeHoratiis, Acting DAS for Oil and Natural Gas, and Acting Designated Federal Officer (DFO)
10:45 am – 12:15 am	Committee Discussion	Mary (Missy) Feeley, Chairman Peter Flemings, Co-Chairman Methane Hydrate Advisory Committee
12:15 pm – 12:30 pm	Public comments, if any	Guido DeHoratiis, Acting DAS for Oil and Natural Gas, and Acting Designated Federal Officer (DFO)
12:30pm	Adjourn	